

CLAIM AMENDMENTS

1-9. (Cancelled)

10. (New) A turbo-compressor, comprising:

an inlet guide vane enabling a change in a vane angle thereof;

a blow-off valve;

a suction condition detecting means for detecting at least one of temperature and suction pressure of a working gas sucked into said turbo-compressor; and

a controller means having a database relating to a minimum angle of said inlet guide vane with respect to the suction condition, wherein said controller means determines the minimum angle by referring to said database and renews the database depending upon detection of surging of said turbo-compressor.

11. (New) A turbo-compressor, comprising:

an inlet guide vane enabling a change in a vane angle thereof;

a main body of the turbo-compressor;

a discharge pressure detecting means for detecting discharge pressure of said turbo-compressor;

a check valve being positioned at the same side of said turbo-compressor main body as said discharge pressure detecting means;

a blow-off valve for blowing off a gas compressed within said turbo-compressor;

a suction condition detecting means positioned at an upstream side of said inlet guide vane for detecting at least one of temperature and suction pressure of

a working gas sucked into said turbo-compressor;

a regulator for controlling an angle of said inlet guide vane and opening/closing of said blow-off valve; and

a surging detecting means provided between said check valve and said turbo-compressor main body;

wherein a database is provided within said regulator for describing therein a relationship between a suction condition and a minimum inlet guide vane angle with respect to a target pressure, respectively;

wherein said regulator determines the minimum inlet guide vane angle by referring to said database; and

wherein the database is renewed when said surging detection means detects surging.

12. (New) The turbo-compressor as defined by claim 11, wherein said regulator renews data of the minimum inlet guide vane angle within said database when said surging detecting means detects surging.

13. (New) The turbo-compressor as defined by claim 11, further comprising a higher controller for controlling said regulator.

14. (New) The turbo-compressor as defined by claim 12, further comprising a higher controller for controlling said regulator.

15. (New) An operation method for controlling discharge pressure of a turbo-compressor using an inlet guide vane and a blow-off valve, comprising:

detecting a value through a temperature detecting means or a pressure detecting means;

obtaining a minimum inlet guide vane angle at that value by referring to data of the minimum inlet guide vane angle, which are memorized in a regulator equipped with said compressor, based upon said value;

driving said inlet guide vane at least at that minimum inlet guide vane angle through a vane driver; and

renewing the data of inlet guide vane angle when surging generates.

16. (New) The operation method as defined by claim 15, wherein said data of the inlet guide vane angle is renewed while opening the inlet guide vane by a predetermined amount when surging generates within said turbo-compressor.

17. (New) The operation method as defined by claim 15, wherein a characteristic of the discharge pressure of the turbo-compressor to the suction flow rate is memorized into the regulator, and when the inlet guide vane angle which is obtained from said characteristic upon changing of said suction flow amount becomes smaller than the minimum inlet guide vane angle, the inlet guide vane is set at the minimum inlet guide vane angle while opening the blow-off valve.

18. (New) The operation method as defined by claim 15, wherein a deviation of a vane angle is obtained when the discharge pressure is higher than

a target discharge pressure, and when the vane angle added with the deviation becomes equal to or less than the minimum inlet guide vane angle, the inlet guide vane is set at the minimum inlet guide vane angle while opening the blow-off valve.

19. (New) The operation method as defined by claim 15, wherein the compressor is shifted into a non-load operation condition by fully opening the inlet guide vane when the discharge pressure is higher than a target discharge pressure and the blow-off valve, and wherein when this condition continues for a predetermined time period, then operation of the compressor is stopped.